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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,289	03/29/2004	Masaki Tagome	8861-495US (P34295-01)	2283

570 7590 10/07/2005

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ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

MILLER, PATRICK L

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,289

Applicant(s)

TAGOME ET AL.

Examiner

Patrick Miller

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 15 is/are rejected.
- 7) ☒ Claim(s) 4-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03292004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 1-15 are objected to because of the following informalities: see bullet(s) below.

Appropriate correction is required.

- Claims 1 and 15 recite, "in accordance with the present invention" (l. 1). Please delete this portion.
- Claim 1 recites, "the comparison outputs" (l. 33). Lack of antecedent basis for this term.
- Claim 4 recites, "the AND operation" (l. 7). Lack of antecedent basis for this term.
- Claim 5 recites, "the AND operation" (l. 13). Lack of antecedent basis for this term.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. Claims 1, 2, and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Morihiro et al. (JP 04-222489).
 - With respect to claim 1, Morihiro et al. discloses a motor comprising a rotor and a windings of a plurality of phases (brushless motor has a rotor and windings); a power supplying means including a plurality of first and second power transistors (Fig. 1, #7; inverter includes transistors); a position detecting means (Fig. 1, #1); an activation controlling means (Fig. 1, #4); a commanding means for outputting a speed command signal (abstract; "speed command"); a switching operation means that causes at least one of the first and second plurality of driving transistors to perform high-frequency

switching operation in response to the speed command signal (abstract; “distributing circuit distributes signals...”); the position detecting means is provided with position detection signal switching means that carries out switching between a detection signal and an inverted detection signal generated by logic and obtained by an obtained signal derived by comparison signals between the terminal voltages of the windings of non-activation phases and the neutral point voltage (Fig. 2, outputs of #1s are inverted at #6 and compared at #3); and the output signal of the position detection signal switching means is used as the position signal during the ON operation of the high-frequency switching operation (Fig. 5).

- With respect to claim 2, Morihiro et al. discloses a state judging means as claimed (abstract; “[w]hen the speed of the synchronous motor 8 exceeds the speed of the command...”).
- With respect to claim 3, the position detection signal switching means carries out switching between the detection signal and the inverted detection signal by inverting the logic of the detection signal when the position signal is input at least once (Figs. 2, #6 inverts the input signal from the position detectors, #1s).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morihiro et al. (JP-04222489) in view of Rowan et al. (5,886,489).
 - With respect to claim 15, Morihiro et al. discloses a motor comprising a rotor and a windings of a plurality of phases (brushless motor has a rotor and windings); a power supplying means including a plurality of first and second power transistors (Fig. 1, #7; inverter includes transistors); a position detecting means (Fig. 1, #1); an activation controlling means (Fig. 1, #4); a commanding means for outputting a speed command signal (abstract; "speed command"); a switching operation means that causes at least one of the first and second plurality of driving transistors to perform high-frequency switching operation in response to the speed command signal (abstract; "distributing circuit distributes signals..."); the position detecting means is provided with position detection signal switching means that carries out switching between a detection signal and an inverted detection signal generated by logic and obtained by an obtained signal derived by comparison signals between the terminal voltages of the windings of non-activation phases and the neutral point voltage (Fig. 2, outputs of #1s are inverted at #6 and compared at #3); and the output signal of the position detection signal switching

means is used as the position signal during the ON operation of the high-frequency switching operation (Fig. 5).

- Morihiro et al. does not disclose a disk drive including a head means and an information processing means.

- Rowan et al. discloses a disk drive apparatus that has a head means and an information processing means (Fig. 1, #8 is the head means and #2 processes head information).

Similar to Morihiro et al., Rowan et al. discloses a brushless motor used with the disk drive apparatus (col. 2, ll. 32-47). The motivation to use a brushless dc motor with a disk drive system is because of the advantages inherent to brushless dc motors.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to implement the control system of Morihiro et al. into a disk drive system that uses a brushless dc motor, thereby providing the advantages inherent to brushless dc motors, as taught by Rowan et al.

Allowable Subject Matter

4. Claims 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With respect to claim 4 (and 11), the Prior Art does not disclose the position signal switching means carries out switching between the detection signal and the inverted detection signal when a signal obtained by an AND operation of the state judgment signal generated at least once and the position signal generated at least once and the position signal generated at least one is input.

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- With respect to claim 5 (and 7, 12, 14), the Prior Art does not disclose determining whether the high-frequency switching is carried out, and the switching being carried out as claimed.
- With respect to claim 6 (and 13), the Prior Art does not disclose the switching operation means, with the limitations of claims 1 and 2, that also outputs a third and fourth predetermined time signal as claimed.
- With respect to claims 8-10, the Prior Art does not disclose the position detecting means using the neutral point to detect the position.

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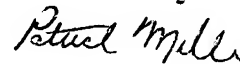
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

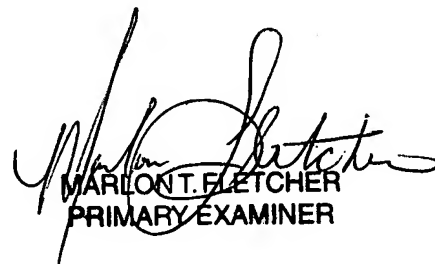
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick Miller
Examiner
Art Unit 2837

pm
October 3, 2005



MARLON T. FLETCHER
PRIMARY EXAMINER